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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/046,639	10/26/2001	Bin Li	10.1020	1095

21919 7590 07/30/2007

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ART UNIT	PAPER NUMBER
2112	

MAIL DATE	DELIVERY MODE
07/30/2007	PAPER

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/046,639
Filing Date: October 26, 2001
Appellant(s): LI ET AL.

Robert N. Blackmon
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 3/19/2007 appealing from the Office action mailed 7/18/2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,598,188 Locke et al. 7-2003

Wicker, S.B. Error Control System for Digital Communication and Storage, 1995 by Prentice-Hall, Page 11.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

Claims 1-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Locke et al. US patent no. 6598188 B1 (Hereinafter Locke).

In regard to claim 1, Locke teaches;

An iterative method for determining parameters for a forward error correction scheme for improving the quality of a data transmission, said method comprising the steps of:

(a) establishing a relationship between said parameters and a coding gain;

(the Abstract in Locke)

(b) initializing said coding gain to a minimum predetermined value;

(col. 27, lines (38-40) and col. 28, lines (6-10) in Locke)

(c) determining, based on said relationship between said parameters and said coding gain, an intermediate set of parameters for providing a preferred result for said coding gain;

(Col.27, lines (60-66) in Locke)

(d) incrementing a value of said coding gain by a predetermined value and repeating said step (c) until said coding gain reaches a predefined maximum value, thereby determining a plurality of intermediate sets of parameters; (col. 27, lines (38-41)in Locke) and

(e) determining a preferred set of parameters from said plurality of intermediate sets of parameters, wherein said preferred set of parameters provides said forward error correction scheme with an optimal set of values for balancing a code length and an error rate of said data transmission.

(col. 28, lines (33-38) in Locke).

In regard to claim 2, Locke teaches;

A method as defined in claim 1, wherein said step (a) of establishing said relationship between said parameters and said coding gain comprises:

(a1) calculating said coding gain for a plurality of associated parameters; and

(a2) storing results of said step (al) in a table.

(Note: col. 27, lines (8-15) in Locke)

In regard to claim 3, Locke teaches;

A method as defined in claim 1, wherein said step (a) of establishing said relationship between said parameters and said coding gain comprises:

(a1) calculating said coding gain for a plurality of associated parameters; (col.4, last four lines in the bottom in Locke) and

(a2) determining an equation that approximates all results from said step (al).

(col.4, last four lines in the bottom in Locke)

In regard to claim 4, Locke teaches;

A method as defined in claim 1, wherein said step (c) of determining said intermediate set of parameters comprises:

calculating a maximum number of bytes per symbol B including said coding gain;

locating all parameters that satisfy said value of said coding gain; and

selecting, as said intermediate set of parameters, and using said maximum number of bytes per symbol B, a set of parameters that provides a best performance.

(Note: col. 28, lines (11-14) in Locke)

In regard to claim 5, Locke teaches;

A method as defined in claim 4, wherein said best performance is defined by said set of parameters that yields a largest number of information bytes.

(col. 28, line 59 in Locke)

Claim 6 is rejected for the same reasons as claim 4

Claim 7 is rejected for the same reasons as claim 5.

In regard to claim 8, Locke teaches;

A method as defined in claim 7, wherein said largest number of information bytes is compared with a maximum number of bytes Bo had said forward error correction scheme not been implemented, for determining whether to use said forward error correction scheme.

(Fig. 3, box 3 in Locke).

In regard to claim 9, Locke teaches;

A method as defined in claim 1, wherein said step (c) of determining said intermediate set of parameters is further based on external factors, wherein said external factors include delay and noise protection.

(col. 27, lines (45-55) in Locke)

Claims 10 and 16, 20 and 21 are rejected for the same reasons as claim 1.

Claim 11 is rejected for the same reasons as claim 5.

Claims 12 and 17 are rejected for the same reasons as claim 4.

In Regard to claim 13, Locke teaches;

A method as defined in claim 10, wherein said step (c) of determining said intermediate set of parameters comprises: -calculating a maximum number of bytes per symbol B including

said coding gain;(Fig 3. in Locke) and

- selectively skipping said step (d) when a value of said minimum number of bytes per symbols B is less than or equal to a previous value of said maximum number of bytes per symbol B.

calculating a maximum number of bytes per symbol B including

said coding gain;

(Fig 3. in Locke).

Claims 14,18, 19, 23 and 24 are rejected for the same reasons as claim 13.

Claim 15 is rejected for the same reasons as claim 1.

(10) Response to Argument

1. In section 1, page 12 of the brief, Appellant reiterates the definition of "coding gain" as provided in the specification in section [0021]. The examiner agrees with the definition and also notes that Wicker in page 11 provides the same

definition for the "coding gain": "The term "coding gain" refers to the difference in power that the non-error correcting system would require to transmit data of a specified bit error rate as compared to the power required by the error correcting system."

2. While Appellant concedes that Wicker provides same definition of the coding gain, the Appellant on page 14, second paragraph of the brief, reverses course and alleges, "Nowhere does Locke et al. determine coding gain or use the coding gain to determine code-word length and redundant length".
The Examiner disagrees and asserts that Locke teaches in detail an iterative method of correction power (i.e. Appellant's own definition of "coding gain") to determine code-word length. The Examiner notes that an iterative method is composed of steps that are performed a number of times or repeatedly or iterations until a stopping criteria has reached. This is exactly what Locke teaches in col. 7, lines (19-28), a program loop for correcting power factor for each coding gain and branches out for example, if the minimum gap is greater than the required gap. This is an iterative method that those of ordinary skill in the art would implement.

3. The Appellant further alleges on page 16 of the brief that there is no enabling disclosure of using coding gain for dynamically selecting error correction parameters by establishing a relationship between the FEC parameters and a coding gain.

The examiner respectfully disagrees. By referring to adjusting coding gain in the manner Locke does, Locke implies that those of ordinary skill in the art would know how to adjust the coding gain and therefore no further explanation is needed to enable dynamic selection of error corrective parameters via coding gain.

4. Appellant finally alleges that "Locke does not even teach that adjusting the coding gain "is" possible or desired, only that it "might" be possible. This does not satisfy the requirement of enablingly disclosing an invention. Obviously, if it were a simple matter, Locke would have taught such an alternative embodiment with sufficient details for one of ordinary skill in the art to make such a version. However, this simple if it were a simple matter, Locke would have taught such an alternative embodiment with sufficient details for one of ordinary skill in the art to make such a version."

The examiner disagrees and further points out that Locke teaches as common knowledge that performing channel analysis during training and initialization by the central office and remote site modems determines the received signal power and noise power. (col. 1, lines (40-50) in Locke).

The Examiner thus asserts that Locke's disclosure teaches every limitation of the claimed invention.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Sam Rizk

Examiner

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